AF ZFW

Customer No. 30,223 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No.	:	09/980,430
Applicant	:	Aart Zeger van Halteren *et al.*
Filed	:	March 29, 2002
Title	:	COIL CONSTRUCTION FOR AN ELECTROACOUSTIC TRANSDUCER
TC/A.U.	:	2644
Examiner	:	Huyen D. Le
Docket No.	:	47161-00031USPX

TRANSMITTAL OF SUBSTITUTE APPEAL BRIEF

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Signature: _____
Adrienne White

Sir:

Submitted herewith is Appellants' Substitute Appeal Brief filed in response to the Communication Re: Appeal mailed on January 31, 2006, and in support of the Notice of Appeal filed September 27, 2004. The Communication set a one-month deadline for reply, and this Substitute Appeal Brief is being submitted within that time period. A check in the amount of $340.00 was previously submitted for the fee associated with filing the original Appeal Brief in accord with 37 C.F.R. § 41.20. To the extent necessary, please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 10-0447 (Attorney Docket No. 47161-00031USPX), and please credit any overpayments to such deposit account.

Date: February 13, 2006

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SUBSTITUTE APPEAL BRIEF PURSUANT TO 37 C.F. R. §§ 41.37

Dear Sir:

This Substitute Appeal Brief is filed pursuant to the Communication Re: Appeal mailed on January 31, 2006, and Appellants' Notice of Appeal to the Board of Patent Appeals and Interferences filed September 27, 2004, from final rejection of claims 8-11 and 27-36 in a Final Office Action dated September 2, 2004. This timely Substitute Appeal Brief pursuant to 37 C.F.R. § 41.37 et seq. is being filed on or before February 28, 2006.

1. REAL PARTY IN INTEREST

The real party in interest is SonionMicrotronic Nederland B.V., having a place of business at Zekeringstraat 9, Amsterdam, Netherlands, 1014 BM.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences which will directly affect or be directly affected by or which have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

Claims 8-11 and 27-36 are currently pending in the above-referenced application. No claims have been allowed. Claims 1-7 and 12-26 have been canceled. An after-final amendment to claim 28 was not entered.

The Appellants appeal from the final rejection of claims 8-11 and 27-36. Claim 28 was rejected under 35 U.S.C. § 112, ¶ 2, as being allegedly indefinite because it depends from withdrawn claim 12. Claims 8-11, 27, and 29-36 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,432,758 (Sone). Claims 8-9 and 31-32 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,861,686 (Lee). Claim 8 was rejected under 35 U.S.C. § 102(a) as being allegedly anticipated by U.S. Patent No. 6.023,518 (Kuwabara). Claims 9-10, 29, and 31-33 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kuwabara.

4. STATUS OF AMENDMENTS

The Appellants filed a timely Amendment and Reply After Final on July 19, 2004, in response to the Final Office Action mailed May 19, 2004. In the Amendment and Reply after Final, the Appellants amended claim 28 to overcome the § 112, ¶ 2 rejection, and cancelled claims 12-26. In an Advisory Action mailed September 2, 2004, the Examiner maintained the rejection of all pending claims, and refused to enter claim 28.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Citations to the drawings and written description are made with reference to WO 00/74436, which is the published international application to which the present applications claims priority.

There are two independent claims on appeal: claims 8 and 31. Claims 9-11 and 27-30 depend from claim 8, and claims 32-36 depend from claim 31. Claim 8 calls for a coil having a coil opening defining an axis therethrough. FIG. 2 shows a coil 9 having a coil opening defining an axis therethrough. *See* page 4, ll. 20-22. Claim 8 further calls for an electric circuit board wherein at least a surface portion thereof is positioned against the coil in a substantially perpendicular relationship to the axis. FIG. 2 shows an electric circuit board 14 having a surface perpendicularly positioned against the coil 9. *See* Page 4, ll. 20-22.

Claim 31 includes the limitations of claim 8, and adds the limitation of the electric circuit board including signal processing electronics. *See* Page 4, line 28 to page 5, line 3. Both claims 8 and 31 call for an **electric** circuit board. FIG. 2 shows a printed circuit board 14, which may have electronics for signal processing.

6. GROUNDS OF REJECTION TO BE REVIEWED

The issues in this Appeal are whether:

an amendment refused entry by the Examiner to Claim 28 to overcome a rejection under 35 U.S.C. § 112, ¶ 2 as indefinite should be entered;

rejection of Claims 8-11, 27, and 29-36 under 35 U.S.C. § 102(b) as being allegedly anticipated by Sone should be reversed;

rejection of Claims 8-9 and 31-32 under 35 U.S.C. § 102(b) as being allegedly anticipated by Lee should be reversed;

rejection of Claim 8 under 35 U.S.C. § 102(a) as being allegedly anticipated by Kuwabara should be reversed; and

rejection of Claims 9-10, 29, and 31-33 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kuwabara should be reversed.

7. ARGUMENT

A. Claim Rejection – 35 U.S.C. § 112

Claim 28 was rejected under 35 U.S.C. § 112 as being dependent on withdrawn Claim 12. Appellants attempted to amend claim 28 to depend from Claim 27, but the Examiner refused to enter the amendment. Appellants request entry of the amendment filed in Appellants' Amendment and Reply to Final Office Action, which was mailed on July 19, 2004. In accordance with 37 C.F.R. § 1.192(c)(4), the status of the amendment to claim 28 is not entered (currently amended). The amendment for which entry is sought for claim 28 is submitted herewith in Appendix 9 hereto. Claim 28 was dependent on withdrawn claim 12, and has been amended to depend from claim 27. In accordance with 37 C.F.R. § 1.116, Appellants state that this amendment was not presented earlier because claim 28 was first rejected in the Final Office Action dated May 19, 2004.

B. Claim Rejections – 35 U.S.C. § 102

1. The Law on Anticipation

Anticipation requires that each and every element, as set forth in the claim, is either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); M.P.E.P. § 2131.

2. Sone Does Not Disclose The Claimed Electric Circuit Board

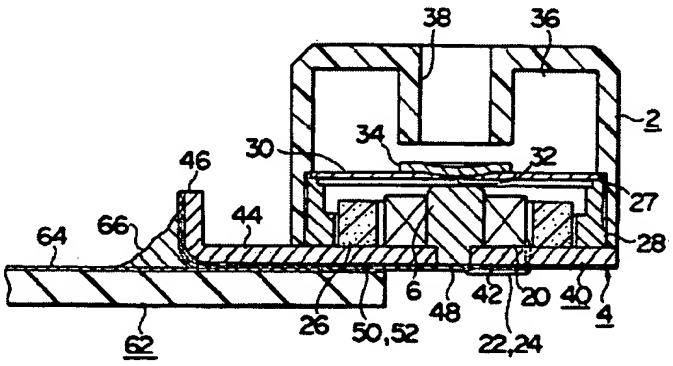
Claims 8-11, 27, and 29-36 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,432,758 (Sone). Claims 8 and 31 call for, *inter alia*, "an electric circuit board wherein at least a surface portion thereof is positioned against said coil in a substantially perpendicular relationship to said axis." Appellants submit that Sone teaches a magnetic circuit, not an electric circuit board as required by the claim. Because Sone fails to disclose this claim element, claim 8 and its dependent claims are believed to be allowable over Sone.

The Office Action contended that "Sone teaches a coil assembly for an electroacoustic transducer which comprises a coil (20) and an electric circuit board (40, 42, 44, 48, 50, 52, figures 1, 2, 7, 8, 9)." Office Action at 2, ¶ 4. Appellants respectfully submit that the elements 40, 42, 44, 48, 50, and 52 do not form an electric circuit board, but rather, form a "magnetic circuit" as explicitly disclosed by Sone. Furthermore, Sone does actually disclose a printed board, designated as element 62, but clearly *no portion* of the printed board 62 (*see* FIG. 5 of Sone) is positioned against a coil in a substantially perpendicular relationship to its axis as called for by independent claims 8 and 31.

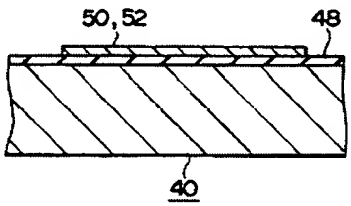
Sone *repeatedly* teaches that the metal base plate 40 forms a closed magnetic circuit not an electric circuit as called for by claims 8 and 31: "The metal base plate 40 is formed of a single metallic plate made of a **magnetic** material to constitute a part of a **magnetic circuit**." Col. 4, ll. 13-16. "That is, both the core 6 and the metal base plate 40 form a closed **magnetic circuit** to thereby constitute a part of a magnetic path of the magnetic driving portion 5." Col. 5,

ll. 25-28. "The electroacoustic transducer has a diaphragm 30 which constitutes a closed **magnetic circuit** together with the magnet 26 and is driven by the vibrating magnetic field . . . ." Col. 5, ll. 40-43. "FIG. 4 shows a concrete embodiment of the metal base plate 40 which serves as a closing means for the opening of the housing 2 and also constitutes a part of the closed **magnetic circuit**." Col. 6, ll. 5-8. "The core 6 is not mechanically connected to the base portion but integrated with the metal base plate 40 to form a closed **magnetic circuit** so as to constitute a part of the magnetic path of the magnetic driving portion 5." Col. 8, ll. 24-28. Nowhere does Sone teach or suggest that the metal base plate 40 is part of an electric circuit board, nor could it be because it is made of metal. Col. 6, ll. 8-10 ("Accordingly, the metal base plate 40 is made of a **metallic plate** so as to give a suitable rigidity thereto."). No electric circuit board could have a metal base plate because metal is conductive and therefore no electric circuits could be mounted to the metal. Appellants are not aware of any electric circuit board where the board to which the electronics are mounted is made of metal.

In fact, Sone does disclose a printed board 62, shown in FIG. 5 (reproduced below) and apparently overlooked by the Office Action, but clearly no portion of the printed board 62 is positioned against the core 20.



Rather, the printed board 62 is positioned against the metal base plate 40 of the magnetic circuit as shown above and as described in Sone: "The closing portion 42 and the terminal portion 44 may be electrically connected and mechanically fixed by solder 66 to a conductive pattern 64 of a printed board 62, as illustrated in FIG. 5." Col. 6, ll. 24-27. *See also* col. 7, ll. 33-36 ("Compared with the embodiment as illustrated in FIG. 5, fixing strength between the metal base plate 40 and the printed board 62 is increased, thereby enhancing the reliability thereof."). In fact, as is illustrated in FIG. 4 (oriented upside-down relative to FIG. 5 and reproduced below), the conductive patterns 50, 52 are disposed on the underside of the metal base plate 40 separated by an insulating film 48:



Thus, Sone teaches that the "conductive patterns 50 and 52 are formed by a conductor forming methods [sic] such as printing or plating conductive paste, and may be used **for** mounting circuits or elements of the electroacoustic transducer for miniaturization and simplification of electronic devices." Col. 4, ll. 36-41 (bolded text added). Although the Examiner cites this passage as alleged support for a teaching of mounting electronics for signal processing (claims 29, 31) to the claimed electric circuit board, Appellants respectfully disagree. The conductive patterns 50, 52, located on the underside of the metal base plate 40, are used **for** mounting circuits or transducer elements to the printed board 62 (which does not correspond to the claimed electric circuit board) and not to the metal base plate 40. As explained above, if the circuits or electric transducer elements were mounted on the metal base plate 40, they would not function because the plate is made of metal. In other words, the use of the word "for" indicates

that circuits or transducer elements are not mounted "on" the conductive patterns 50, 52, but rather the conductive patterns 50, 52 are used "for" mounting them.

Therefore, for at least the foregoing reasons, claims 8 and 31 are believed to be allowable over Sone, and the rejection thereof should be reversed. Regarding the dependent claims 9-10, 27-30, 32-36, they are believed to be allowable for at least the reason that the respective claims from which they depend are allowable.

3. Sone Does Not Disclose Elements Required By The Rejected Dependent Claims

Regarding claims 9 and 32, they are believed to be allowable over Sone for at least the additional reason that Sone does not teach or suggest a flexible electric circuit board as claimed. The Office Action cites Col. 4, ll. 27-43, and Col. 6, ll. 11-19 & 65-67 as alleged support that the metal base plate 40 can be flexible. In fact, these passages nowhere state that the metal base plate 40 can be flexible. On the contrary, Sone teaches that "the metal base plate 40 is made of a metallic plate so as to give a suitable **rigidity** thereto." Col. 6, ll. 8-10 (bolded text added). That the conductive patterns 50, 52 may be flexible is of no moment because the Office Action identifies the electric circuit board as including the metal base plate 40, which is clearly rigid, not flexible. Accordingly, claims 9 and 32 are believed to be allowable over Sone for at least this additional reason, and the rejection of these claims should be reversed.

Regarding claims 11 and 34, they are believed to be allowable over Sone for at least the additional reason that the metal base plate 40 is not the electric circuit board as claimed, and therefore lacks the opening as claimed. Moreover, Sone does not teach or suggest that the printed board 62 includes any opening, let alone an opening that is substantially aligned with the coil opening. Accordingly, claims 11 and 34 are believed to be allowable over Sone for at least this additional reason.

Regarding claim 36, even assuming *arguendo* that the printed board 62 is an electric circuit board, Sone does not teach electrically connecting the printed board 62 to the coil via coil lead wires. Sone actually teaches that the metal base plate 40 may be electrically connected and mechanically fixed by "**solder** 66 to a conductive pattern of a printed board 62, as illustrated in FIG. 5." Col. 6, ll. 25-27 (bolded text added).

4. Lee Does Not Even Show A Circuit Board

Claims 8-9 and 31-32 were also rejected as being allegedly anticipated by Lee. The Office Action identifies the claimed electric circuit board as allegedly corresponding to element 3b of Lee, but overlooks the fact that Lee explicitly states that a printed circuit board (PCB) is not shown in the Figures. The second vibration member 3b is clearly not an electric circuit board as claimed. It is "not made of a thin metal plate but is made of a **synthetic resin film**." Col. 4, ll. 7-9 (bolded text added). Lee describes the purpose of the second vibration member 3b as follows:

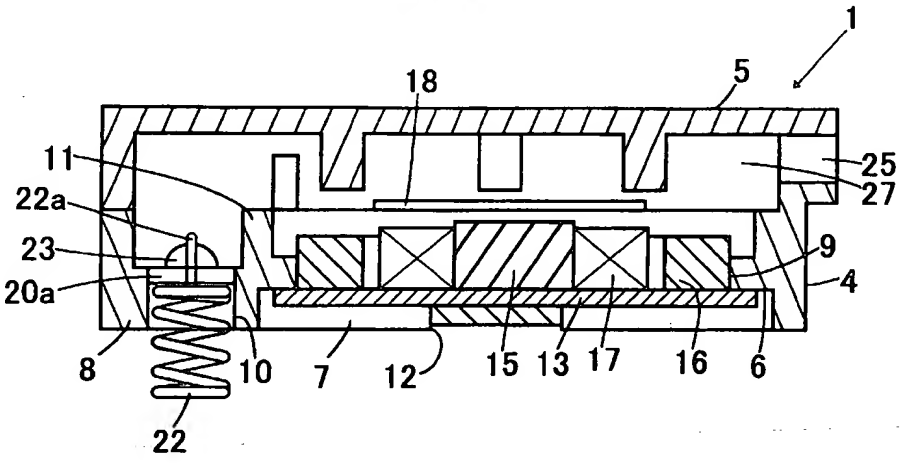
> During a process of producing a cellular or pager phone, the integrated device of this invention is set in the phone using the tapes 30. In addition, the outer terminals 33b of the lead panel 23b of the second vibration member 3b are connected to the **PCB (not shown)** of the phone, [sic] Due to such a second vibration member 3b, the integrated device of this invention effectively connects the coil 8 to the PCB of the phone while being free from any separate circuit board.
>
> In the operation of the above device, a user freely select, one of the two modes: a vibration mode performed by the first vibration member 3a and a sound mode performed by the second vibration member 3b. When a user selects one of the two modes, the PCB of the cellular or pager phone outputs a high or low frequency to the coil 8 of the device in response to a calling signal output from a microprocessor of the phone. In this case, the output frequency is automatically controlled by the PCB in accordance with a selected mode of the device.
>
> Due to such a frequency applied from the PCB to the coil 8 of the device, an electromagnetic field is formed between the magnet 7 and the coil 8, thus moving both the yoke 6 and the coil 8 in the axial direction of the case 1 **while selectively vibrating either of the two vibration members 3a and 3b**.

Col. 5, ll. 13-28 (bolded text added). Thus, the second vibration member 3b vibrates in response to a frequency applied by a printed circuit board *which is not even shown in Lee*. Accordingly, Lee does not even show an electric circuit board, let alone one as claimed in claims 8-9, 31-32. Therefore, they are believed to be allowable over Lee, and the rejection of these claims based on Lee should be reversed.

5. The "Coil Spring" Of Kuwabara Does Not Correspond to The Claimed Coil

Claim 8 was rejected under 35 U.S.C. § 102(a) as being allegedly anticipated by Kuwabara. The Office Action avoids any mention of the "coil 17" shown and described repeatedly throughout Kuwabara, but instead contends that the **coil spring** 22 (the Office Action refers to the coil spring 22 as a coil) corresponds to the claimed coil. This contention runs directly afoul of the explicit teachings of Kuwabara. For convenience, Figure 2 of Kuwabara is reproduced below, showing the coil spring 22 and the coil 17:

FIG. 2



Kuwabara itself makes a clear distinction throughout the written description between the "coil 17" and the "coil spring 22." Col. 2, ll. 51-52 ("Thus, the coil 17 is connected to the coil springs 22."). Kuwabara also makes the same distinction in the claims (*see, e.g.,* Claim 1, "a

coil" and "at least two coil springs"). If the coil spring 22 is a coil as the Office Action contends, then the distinction by Kuwabara between the coil spring 22 and the coil 17 is meaningless. Thus, Appellants respectfully submit that claim 8 is allowable over Kuwabara, and the rejection thereof should be reversed.

C. Claim Rejection – 35 U.S.C. § 103

1. The Law Of Obviousness

Obviousness requires that all the limitations of a claim must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974)). A *prima facie* case of obviousness requires three basic criteria.

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.

M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)).

Although a prior art reference may be modified to meet the claimed limitation, the resultant modified reference is not obvious unless the prior art also suggests or motivates the desirability of the modification. *In re Mills*, 916 F.2d 680, 682, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990) (citing *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984)). Obviousness cannot "be established using hindsight or in view of the teachings or suggestions of the invention." *Ex parte Maguire*, 2002 WL 1801466, at *4 (Bd. Pat. App. & Inter. 2002) (quoting *Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.*, 73 F.3d 1085, 1087, 37 U.S.P.Q.2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 519 U.S. 822 (1996)). Further, the

proposed modification cannot render the prior art "unsatisfactory for its intended purpose" nor can it "change the principle of operation" of a reference. M.P.E.P. § 2143.01 (citing *In re Gordon*, 733 F.2d at 902, 221 U.S.P.Q. at 1127 and *In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. 349, 352 (C.C.P.A. 1959)).

Additionally, it is rarely appropriate for an Examiner to rely on common knowledge or well-known prior art not supported by documentary evidence, when an application is under final rejection. M.P.E.P. § 2144.03. An Examiner can generally only rely on unsupported common knowledge or well-known prior art when the facts asserted are "capable of instant and unquestionable demonstration as being well-known." *Id.* (citing *In re Ahlert*, 424 F.2d 1088, 1091, 165 U.S.P.Q 418, 420 (C.C.P.A. 1970)). Further, "[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based." *Id.* (citing *In re Zurko*, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001) and *In re Ahlert*, 424 F.2d at 1092, 165 U.S.P.Q at 421).

Claims 9-10, 29, and 31-33 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kuwabara. Regarding claims 9-10 and 29, they are believed to be allowable for at least the reason that claim 8, from which they depend, is allowable for the reasons explained above. Regarding independent claim 31, it is believed to be allowable for at least the same reasons that claim 8 is allowable over Kuwabara. Regarding claims 32-33, they are believed to be allowable for at least the reason that claim 31 is allowable. Accordingly, Appellants request that the rejection of claims 9-10, 29, and 31-33 over Kuwabara be reversed.

8. CONCLUSION

For at least the foregoing reasons, the final rejection of appealed claims 8-11 and 27-36 set forth in the Final Office Action mailed May 19, 2004, should be reversed.

The Commissioner is hereby authorized to charge Deposit Account No. 10-0447 (Order No. 47161-00031USPX for any additional fees inadvertently omitted which may be necessary now or during the pendency of this application, except for the issue fee.

Date: February 13, 2006

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9. APPENDIX OF CLAIMS ON APPEAL

8. A coil assembly for an electroacoustic transducer, comprising:

a coil having a coil opening defining an axis therethrough; and

an electric circuit board wherein at least a surface portion thereof is positioned against said coil in a substantially perpendicular relationship to said axis.

9. The coil assembly of claim 8, wherein said electric circuit board is flexible.

10. The coil assembly of claim 8, wherein said electric circuit board is rigid.

11. The coil assembly of claim 8, wherein said electric circuit board includes an opening, said opening of said electric circuit board being substantially aligned with said coil opening.

27. The coil assembly of claim 8, wherein said surface portion of said electric circuit board is positioned against said coil by adhesion.

28. (Not Entered) The coil assembly of claim [[12]] 27, wherein said adhesion is glue.

29. The coil assembly of claim 8, wherein said electric circuit board includes electronics for signal processing.

30. The coil assembly of claim 8, wherein said electric circuit board is electrically connected to said coil via lead wires.

31. A coil assembly for an electroacoustic transducer, comprising:

a coil having a coil opening defining an axis therethrough; and

an electric circuit board wherein at least a surface portion thereof is positioned against said coil in a substantially perpendicular relationship to said axis, said electric circuit board including signal processing electronics.

32. The coil assembly of claim 31, wherein said electric circuit board is flexible.

33. The coil assembly of claim 31, wherein said electric circuit board is rigid.

34. The coil assembly of claim 31, wherein said electric circuit board includes an opening, said opening of said electric circuit board being substantially aligned with said coil opening.

35. The coil assembly of claim 31, wherein said surface portion of said electric circuit board is positioned against said coil by adhesion.

36. The coil assembly of claim 31, wherein said electric circuit board is electrically connected to said coil via coil lead wires.

10. EVIDENCE APPENDIX

None.

11. RELATED PROCEEDINGS APPENDIX

None.